Claims:

1. (Original) A method for predicting the tendency of inhaled particles to deposit within a first patient's throat when said particles are inhaled through an airway defined by said first patient's throat, said method comprising

determining at least one internal physical parameter of said airway defined by the first patient's throat by means of acoustic imaging of the airway defined by the first patient's throat; and

matching said at least one internal physical parameter of the airway of the first patient's throat with a dataset comprising pre-determined data relating to the corresponding internal physical parameter for the throat of at least one other patient,

wherein said dataset also comprises pre-determined data relating to the tendency of said inhaled particles to deposit within said at least one other patient's throat, and said matching thereby enables prediction of the tendency for the inhaled particles to deposit within the first patient's throat.

2. (Original) A method according to claim 1, wherein the inhaled particles are delivered to the airway by means of an inhaler device.

3. (Previously presented) A method according to claim 1, wherein the inhaled particles comprise medicament.

4. (Previously presented) A method according to claim 1, wherein said acoustic imaging comprises acoustic reflection imaging.

5. (Previously presented) A method according to claim 1, wherein the acoustic imaging is by by means of acoustic pharyngometry.

6. (Previously presented) A method according to claim 1, wherein the at least one internal physical parameter is selected from the group consisting of throat volume, throat cross-sectional area and throat length.

7. (Previously presented) A method according to claim 1, wherein the dataset comprises said pre-determined data relating to the corresponding internal physical parameter for the throat of at least ten other patients.

8. (Previously presented) A method according to claim 1, wherein the pre-determined data relating to the corresponding internal physical parameter is collected by use of Magnetic Resonance Imaging (MRI) of the throat airway of the at least one other patient.

9. (Previously presented) A method according to claim 1, wherein said data relating to the tendency of said inhaled particles to deposit within the at least one other patient's throat is obtained by use of a laboratory model reconstruction thereof.

10. (Previously presented) A method according to claim 1, wherein said matching is by use of a curve-fitting method.

11. (Original) A method for predicting the tendency of inhaled particles to deposit within an airway defined by a first patient's throat, said method comprising

(a) assembling a dataset comprising data relevant to each of plural patients by

(i) determining at least one internal physical parameter of the airway defined by the throat of at least one other patient; and

(ii) determining the tendency of inhaled particles to deposit within the throat of said at least one other patient

(b) determining at least one internal physical parameter of the airway defined by the first throat by means of acoustic imaging of the airway defined by the throat; and

(c) matching said at least one internal physical parameter of the airway defined by the first throat with said dataset,

wherein reference to said matching thereby enables prediction of the tendency for the inhaled particles to deposit within the first patient's throat.

12. (Original) A method according to claim 11, wherein the dataset comprising physical parameter and deposition of inhaled particles data relevant to the at least one other patient is obtained by

measuring the volume (V) of the airway defined by the throat of the at least one other patient;

measuring the path length (L) of a central line of the throat airway in the mid-sagittal plane;

measuring the flow rate (Q) of said particles or the airflow in which said particles are suspended;

calculating a mean throat diameter (D_{mean}) by means of the formula

$$D_{mean} = 2 (V / \pi L)^{0.5} \quad (1)$$

calculating a mean particle flow velocity (U_{mean}) by means of the formula;

$$U_{mean} = QL / V \quad (2)$$

and predicting the amount of particle deposition (P) at the throat by correlating terms defined by the formula

$$P = f(U_{mean} / D_{mean}) \quad (3)$$

wherein P is a function of U_{mean} and D_{mean}.

13. Canceled.

14. Canceled.